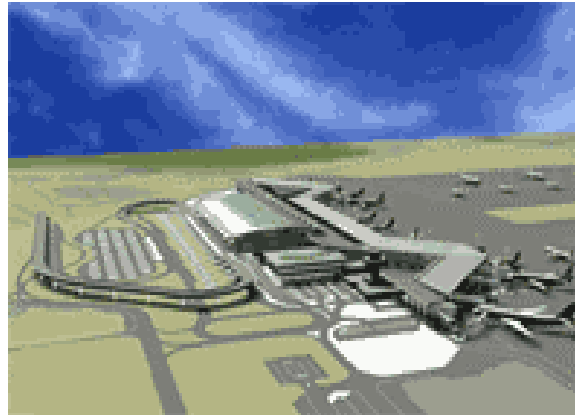


MODAIR: Measure and development of interMODality at AIRport



*INO WORKSHOP
EEC, December 6^h 2005*

What is intermodality?

*“The use of **different** and **coordinated** modes of transports for one trip”*

High Speed train

*Alternative to
short-haul flights*



Local trains

*Airport
local access*



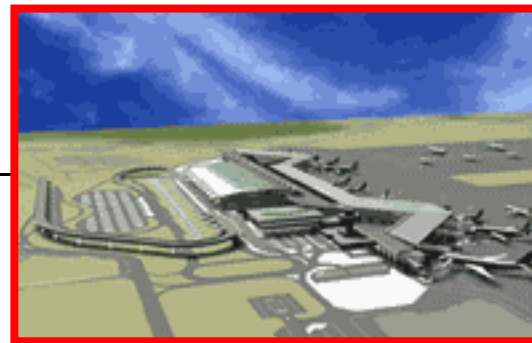
Public buses

*Airport
local access*



Airport

*Central multimodal
interchange node*

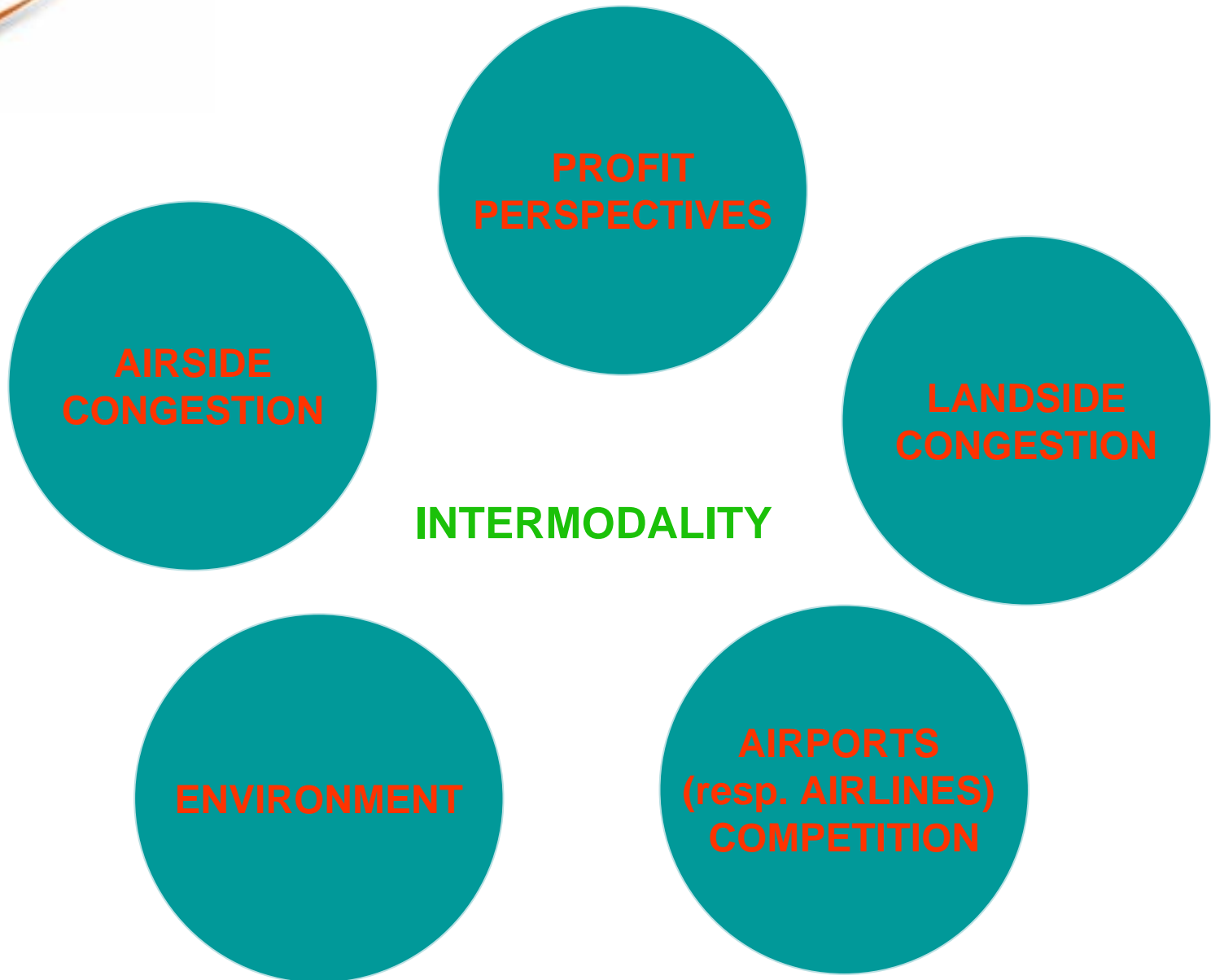


Airlines



Scope of the study

Why intermodality?



CARE-INO intermodality studies

2004

2005

2006

“The Airport of the future: Central link of intermodal transports?”

- Qualitative analysis of intermodality potential (scenarios)

- Case studies: France & Portugal

“MODAIR: Measure and development of interMODality at AIRport” (WP1, WP2, WP5)

-Airport intermodality indicators

- Actors’ expectations with regards intermodality development (interviews)

-Illustration (development of a tool)

“MODAIR: Measure and development of interMODality at AIRport” (WP3 , WP4, WP6)

- Economic instruments, political and administrative measures for intermodality development

- Analysis of the impact on airports’ catchment’s areas

- Illustration (refinement of the tool)

MODAIR 2005 Work Packages

◀ WP1: Intermodality indicators

- Airport local access
- Airport integration in the regional or national network of other transport modes

◀ WP2: Actors' point of view

- Actors expectations
- Driving forces
- Risks and issues.

◀ WP5: MODAIR tool, version 1

- Graphical visualisation of intermodality indicators at airports

MODAIR team

◀ M3 Systems:

- management and coordination of the project,
- expertise in air transport economics



◀ ANA:

- good knowledge of Portuguese transport network,
- deep expertise in airport management and air transport



◀ ENAC-LEEA:

- good knowledge of French transport network,
- deep expertise in air transport economics



◀ GISMEDIA:

- Software developer



Intermodality indicators (1/4)

◀ Two levels of analysis:

- Macro-level, providing the broad picture of intermodality
- Micro-level, providing the detailed analysis, useful for benchmarking purposes

◀ Four categories:

- Intermodal infrastructure
- Intermodal operators
- Intermodal service
- Demand for intermodality

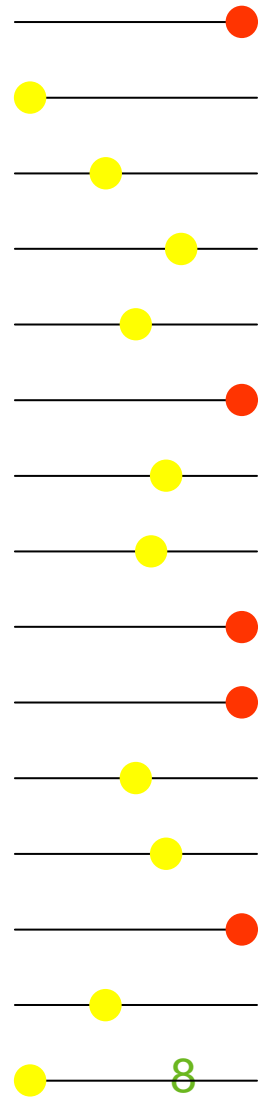
Intermodality indicators (2/4)

Relative importance level
Low Medium High

Supply

Demand

Supply	Intermodal infrastructure	Existence of rail infrastructure in the airport area	●
		Access time between the infrastructure and the terminal	●
		Rail capacity	●
		Interest of intermodal infrastructure for airport users	●
	Intermodal operators	Number of intermodal operators	●
		Market Share	●
	Intermodal service	Existence of intermodal agreements	●
		Specificities of intermodal agreements	●
		Intermodal air supply	●
		Intermodal rail supply	●
		Competition between air and rail	●
	Demand for intermodality	Number of intermodal passengers transported	●
Number of multimodal passengers transported		●	
Potential intermodal demand with current service levels		●	
Potential intermodal demand on existing network		● 8	



Intermodality indicators (3/4)

Example: Airport integration into the railway (inter)national network

	Category	Indicator	Heathrow	CDG	Frankfurt	Schiphol
Supply	Intermodal infrastructure	Number of rail infrastructure connected to the airport	0	1	2	2
	Intermodal operators	Yearly ASKs of airlines having intermodal agreements, over the total number of yearly ASKs at the airport	N/A	60%	88%	59%
	Intermodal service	Number of intermodal destinations by air relative to the total number of destinations	N/A	56%	76%	58%
		Number of intermodal rail destinations	N/A	16	~ 6000	~ 6000
Demand	Demand for intermodality	Number of passengers using successively rail and air relative to the total number of airport passengers that are not in transit	N/A	5%	13%	?

Intermodality indicators (4/4)

Example: Airport local rail access

	Category	Indicator	Heathrow	CDG	Frankfurt	Schiphol
Supply	Intermodal infrastructure	Number of rail infrastructure connected to the airport	2	1	1	1
	Intermodal operators	Yearly ASKs of airlines having intermodal agreements, over the total number of yearly ASKs at the airport	55%	0%	0%	0%
	Intermodal service	Number of intermodal destinations by air relative to the total number of destinations	84%	0%	0%	0%
		Average daily frequencies of the airport rail access	70	0	0	0
Demand	Demand for intermodality	Number of passengers using successively rail and air relative to the total number of airport passengers that are not in transit	32%	?	?	?

Intermodal actors

- European Commission & States;
- Private investors;
- Passengers;

Literature's
Review

- Airports;
(ANA Management Board, Lisbon, NAER (New Lisbon Airport), Frankfurt, Lyon)
- Airlines;
(Lufthansa)
- Railway Infrastructure companies;
(RFF – France, REFER – Portugal)
- Rail Operators;
(Thalys, RAVE)

Consultations

List of actors expectations

EC & Member States	Passengers	Airports	Airlines	Railway Infra companies	Rail Operators	Infra Private Investors
<p>Development of sustainable mobility (transport of PAX & goods)</p> <p>Decrease of congestion</p> <p>Mitigation of ENV impact of transport</p> <p>Promotion of regional economic development (states)</p>	<p>Cost of the intermodal trip vs. non intermodal one</p> <p>Travel time: rail travel times, connecting rail-air times, rail-air schedules' compatibility</p> <p>Quality of service: Timing reliability, luggage transportation, integrated ticketing, on-board comfort & services, safeguards against unexpected events (e.g. delays, strike)</p>	<p>Increase of the catchment area</p> <p>Increase of the PAX number in spite of the airside's congestion</p> <p>Mitigation of the ENV impact of air transport</p> <p>Integration of the airport into the transportation network</p>	<p>Substitution of air to rail because of airside congestion</p> <p>Cut costs on feeder flights in order to increase profitability</p> <p>Increase of the capturing market</p> <p>Increase of the attractiveness of airlines' hub</p>	<p>Development & expansion of the railway infra</p> <p>Optimal use of the infra</p> <p>Improvement of the rail market's share</p>	<p>Attract PAX usually accessing the airport by road</p> <p>Attract PAX by concluding agreements with as many airlines as possible</p> <p>Increase of the rail operators' market share</p> <p>Promotion of the image of high speed rail</p>	<p>Profitability of the project (quick returns on investments)</p>

Actors' issues and concerns

EC & Member States	Passengers	Airports	Airlines	Railway Infra companies	Rail Operators	Infra Private Investors
<p>Conflicting choice investments</p>	<p>Competition reduction (impact on costs & services, ...)</p>	<p>Overlap of airports' catchment's areas</p> <p>Car parking revenues losses</p> <p>Potential loss of retail revenues in result of less time spent at airports by intermodal passengers</p>	<p>Loss of control on their feeder routes</p> <p>Intermodality is to the competitors' advantage: e.g. intermodal agreements on competing short-haul routes</p> <p>Intermodality's complexity and costs are not in accordance with the low cost model</p>	<p>High costs of intermodal projects (especially the building of the infrastructure)</p>	<p>Intermodality is to the airlines' advantage: e.g. improvement of the access to the airport</p> <p>Remaining air / rail competition</p> <p>Conflicting interests: e.g. long distance vs. short distance rail</p>	<p>Fear of excessive time lag between investments & first incomes</p> <p>Unreliability of cost estimations</p>

Intermodality issues (1/2)

◀ Required investments, financial issues:

- Airport railway terminal station;
- Railway network (i.e. tracks);
- Intermodal facilities (luggage, ticketing distribution, staffing costs).

◀ Intermodal actors' co-ordination:

- Air / Rail schedules;
- Information, advertising, booking issues;
- Quality of service.

◀ Passengers' perception regarding intermodal transport:

- Passengers' image of rail transport;
- Passengers' concerns regarding the use of two different transport modes

Intermodality issues (2/2): Geographical specificities

At the “borders” of Europe
(e.g. Portugal, Eastern European countries)

Rail mode:
A complement to air

- Distances to centre Europe are important, making HST competitiveness more difficult to reach

→ Air will continue to assure the connection with the “exterior”

At the “core” of Europe
(e.g. Bénélux, France, Germany)

Rail mode:
An alternative to air

- Distances between the centres generator of traffic are short & air traffic is congested, making HST an interesting alternative to air

→ Commitment to alternative rail modes (substitution of short-haul flights)

Intermodal high level solutions

☞ **Solutions to the funding issue:**

- Subsidies
- Exclusivity

☞ **Solution to the co-ordination problem:**

- Intermodal agreement (formalisation of the actors' co-ordination)

Illustration: MODAIR tool, v1 (1/2)

◀ Global objectives of the tool:

- illustrate several levels of intermodality of airports using numerical and graphical formats (charts);
- Perform benchmarking between airports.

◀ Main features:

- **Two levels of indicators are presented:** macro and micro level indicators;
- **An integrated geographic perspective of the European territory is given,** with the infrastructures such as railways, roads, highways, etc);
- **Users are guided through the editing process:** through a graphical user interface, with indicators organised in groups and types;
- **Users may define various possible scenarios** (for different airports and/or for a same airport): all these scenarios can be saved in a database, for later analysis/comparison;
- **Users have a benchmarking functionality:** all the results might be compared via tables/graphs that show the values for different selected airports (external comparison) and/or for different scenarios for a same airport (internal comparison);
- **Description of all the indicators is available** while using the functionalities of the tool (e.g. while inserting / reviewing data and/or while comparing scenarios).

Illustration: MODAIR tool, v1 (2/2)

◀ Overview of the tool:

The tool has a graphical user interface, with the map of Europe, showing airports, and all other relevant infrastructure elements. It is organised around 3 main areas:

- “**Guided tour**” through the indicator groups and through each indicator: description of all the indicators (and of the data that is needed to compute the indicators) to the user.
- “**Data collection**”: input of new data, editing of existing data, creation of scenarios from “scratch”, editing of existing scenarios (already defined in the tool’s database) by changing some of the values, etc.
- “**Benchmarking**”: through the selection of different scenarios, results (indicators) can be compared via the output of charts / graphs and tables.

MODAIR 2006 Proposed WPs

- ◀ WP3: Measures that promote development of intermodality at airports
 - Identification of the economical measures (e.g. kerosene tax, slot attribution policies, etc.)
 - Consequences, impacts of the measures

- ◀ WP4: Impact of airport intermodality development on airport catchments area
 - Catchment area concept review
 - Identify the factors with impact on an airport catchment area
 - Impact of intermodality

- ◀ WP6: MODAIR tool, version 2

WP3: Economical measures

- ◀ Identification of the economical measures having an impact on the development of intermodality:
 - Kerosene tax or other tax (pollution, third world...);
 - Slots attribution;
 - Airport deregulation;
 - Rail deregulation;
 - Public or European financing programs.

- ◀ Consequences, impacts of these measures

- ◀ Impact of intermodality on:
 - Competition between airports & modes of transport
 - The actors of the market (better coverage, reduction of congestion, diversification of the services offered, pollution, etc.)

Catchment area theoretical study

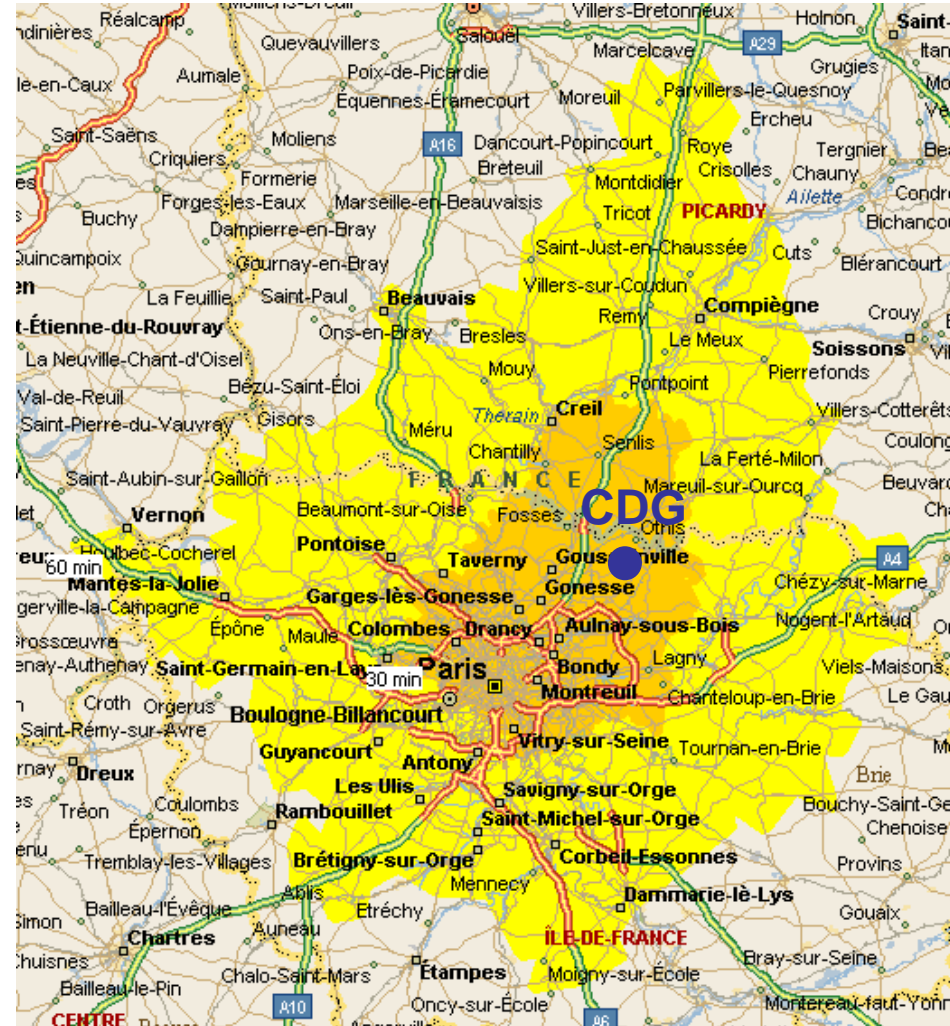
- ☞ **One of the most important aspects stated by airports regarding intermodality is the possibility of increasing demand by means of enlargement of their catchment area**

- ☞ **The objective of WP4 is to analyse how the development of intermodality can impact on airport catchment area, by:**
 - Catchment area concept review;
 - Considering the “business attractiveness” of the airport, comprising a “local catchment area” and a “hub catchment area
 - Identify the factors with impact on airport catchment area;
 - Study the potential impact of intermodality;
 - Considering examples of catchment area developments related with intermodality.

WP6: MODAIR tool, v2

Global objectives of MODAIR tool v 2:

- represent the airport catchment's areas in the form of access time ranges from a given airport location;
- estimate the impacts on the catchment's areas due to intermodality development (i.e. due to modifications of the intermodality indicators);
- show the results on a map display (evolution of the catchment's areas);
- refine the functionalities already developed in 2005: interface of the tool (interactivity), etc.



60 minutes

30 minutes

DEMO!

MODAIR tool

DEMO!

INO Workshop - Brétigny, December 6th 2005